



**DEPARTMENT OF CIVIL ENGINEERING**

<b>COURSE PLAN – PART I</b>			
<b>Name of the programme and specialization</b>	<b>B.Tech. (Civil Engineering-First year- II-Semester)</b>		
<b>Course Title</b>	Engineering Mechanics		
<b>Course Code</b>	CEPC-10	<b>No. of Credits</b>	3
<b>Course Code of Pre-requisite subject(s)</b>	NIL		
<b>Session</b>	January 2019	<b>Section (if, applicable)</b>	A
<b>Name of Faculty</b>	Dr. Deendayal	<b>Department</b>	Civil Engineering
<b>Official Email</b>	deendayal@nitt.edu	<b>Telephone No.</b>	0431-250-3170
<b>Name of Course Coordinator(s) (if, applicable)</b>	<b>Dr. Marisamynathan</b>		
<b>Official E-mail</b>		<b>Telephone No.</b>	
<b>Course Type (please tick appropriately)</b>	<input type="checkbox"/> <b>Core course</b>	<input type="checkbox"/> <b>Elective course</b>	
<b>Syllabus (approved in BoS)</b>			
<p>Fundamentals: Mechanics and its relevance, concepts of forces, laws of mechanics - Lami's theorem, concept of free-body diagram, centroids, center of gravity, area moment of inertia, mass moment of inertia.</p> <p>Friction: Laws of friction, application of laws of friction, wedge friction, body on inclined planes.</p> <p>Statics: Principles of statics, types of forces, concurrent and non - concurrent forces, composition of forces, forces in a plane and space, simple stresses and strains, elastic constant.</p> <p>Cables and Trusses: Cable subjected to concentrated loads, UDL with supports at different levels - analysis of trusses – method of joints – method of sections.</p> <p>Dynamics: Principles of dynamics, D'Alembert's principle, conservation of momentum and energy, vibrations of simple systems.</p>			
<b>COURSE OBJECTIVES</b>			
<p>1. To explain the importance of mechanics in the context of engineering and conservation equations.</p>			



<ol style="list-style-type: none"> <li>2. To explain the significance of centroid, centre of gravity and moment of inertia.</li> <li>3. To introduce the techniques for analyzing the forces in the bodies.</li> <li>4. To apply the different principles to study the motion of a body, and concept of relative velocity and acceleration.</li> <li>5. To describe the trajectory of a particle under projectile motion.</li> <li>6. To identify the basic elements of a mechanical system and write their constitutive equations.</li> </ol>	
<b>MAPPING OF COs with POs</b>	
<b>Course Outcomes</b>	<b>Programme Outcomes (PO)</b>
The terminal objectives of the course is that, on successful completion of teaching-learning and evaluation activities, a student would be able to identify and analyze the problems by applying the fundamental principles of engineering mechanics and to proceed to research, design and development of various engineering systems.	<b>1,3,6,8,9,11,12.</b>

<b>COURSE PLAN – PART II</b>			
<b>COURSE OVERVIEW</b>			
This course tries to develop the students in engineering to analyse any problem in a simple and logical manner based on well understood basic principles. The emphasis will be given on the correct understandings of the principles of mechanics and their application in the solution of Engineering problems.			
<b>COURSE TEACHING AND LEARNING ACTIVITIES</b>			( Add more rows)
<b>S.No.</b>	<b>Week/Contact Hours</b>	<b>Topic</b>	<b>Mode of Delivery</b>
1	Week 1	Fundamentals: Mechanics and its relevance, concepts of forces, laws of mechanics.	Black board
2	Week 2	Lami's theorem, concept of free-body diagram, centroids, center of gravity, area moment of inertia, mass moment of inertia.	Black board
3	Week 3	Statics: Principles of statics, types of forces, concurrent and non - concurrent forces.	Black board
4	Week 4	Composition of forces, forces in a plane and space, simple stresses and strains, elastic constant.	Black board



5	Week 5	<b>Assessment-I</b>	
6	Week 6	Friction: Laws of friction, application of laws of friction.	Black board
7	Week 7	Wedge friction, body on inclined planes.	Black board
8	Week 8	Cables and Trusses: Cable subjected to concentrated loads, UDL with supports at different levels.	Black board
9	Week 9	Analysis of trusses – method of joints – method of sections.	Black board
11	Week 10	<b>Assessment-II</b>	
12	Week 11	Introduction for Dynamics	Black board
13	Week 12	Principles of dynamics, D'Alembert's principle	Black board
14	Week 13	Conservation of momentum and energy	Black board
15	Week 14	Vibrations of simple systems.	Black board

**COURSE ASSESSMENT METHODS** (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment-I	Week 5	1 hour	20 %
2	Assessment-II	Week 10	1 hour	20 %
3	Assessment-III (Assignments : 5)	Week 6-8 and 12-14	1 week	10 %
4	*CPA (Compensation Assessment)	Week 14/15	1 hour	20%



5	Assessment-IV (End Assessment)	Week 15	3 hour	50 %
<b>COURSE EXIT SURVEY</b> (mention the ways in which the feedback about the course shall be assessed)				
<ol style="list-style-type: none"><li>1. Feedback from the student during class committee meetings</li><li>2. Through the feedback section portal in "MIS"</li></ol>				
<b>COURSE POLICY</b> (including compensation assessment to be specified) <b>*Compensation Assessment will be conducted for genuine reason</b>				
<b>THE PASSING POLICY:</b> The minimum passing marks will be 35% or (Class average/2) whichever is greater (as per the regulations)				
<b><u>ATTENDANCE POLICY</u></b> (A uniform attendance policy as specified below shall be followed)				
<ul style="list-style-type: none"><li>➤ At least 75% attendance in each course is mandatory.</li><li>➤ A maximum of 10% shall be allowed under On Duty (OD) category.</li><li>➤ Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.</li></ul>				
<b><u>ACADEMIC DISHONESTY &amp; PLAGIARISM</u></b>				
<ul style="list-style-type: none"><li>➤ Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.</li><li>➤ Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.</li><li>➤ The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.</li><li>➤ The above policy against academic dishonesty shall be applicable for all the programmes.</li></ul>				
<b>ADDITIONAL INFORMATION, IF ANY</b>				
<b>Room No:</b> 101 (Annex Building)				



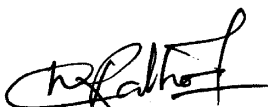
# NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

Department of Civil Engineering

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- All the students are advised to check their NIT-T webmail regularly to know the updates. All the correspondence (schedule of classes / schedule of assessment / course material / any other information regarding this course) will be communicated through webmail or class representative.
- Queries / Clarifications / Discussions (if required) may be E-mailed to me / contact me during 12.10 AM to 1.00 PM on Monday to Friday with prior intimation.

FOR APPROVAL

Course Faculty 

CC-Chairperson 

HOD 



## Guidelines

- a) The number of assessments for any theory course shall range from 4 to 6.
- b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.
- c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.
- d) The passing minimum shall be as per the regulations.

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

- e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.
- g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.